

Docket No.: K-262

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :
Yeong Jong SHIN :
Serial No.: Unassigned : Group Art Unit: Unassigned
Filed: September 24, 2001 : Examiner: Unassigned
For: METHOD AND SYSTEM FOR SETTING UP CALL IN CDMA MOBILE
COMMUNICATION SYSTEM

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Prior to initial examination on the merits, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Please amend the specification by replacing paragraphs as follows:

A. Specification Paragraphs With Mark-ups to Show Changes Made

The following are mark-ups to show changes made to paragraph 9 starting at page 4, line 3 and ending at page 4, line 6:

A circuit data call or a packet data call can be provided for a data call in the CDMA mobile communication system. The circuit data in a range of [14,4bps - 64bps] 14.4kbps~64kbps is processed in interlock of the MSC 18 and the IWF 20, and the PDSN 23 provides a service to process a packet data of [144k or 384k] 144kbps or 384kbps class.

The following are mark-ups to show changes made to paragraph 25 starting at page 8, line 8 and ending at page 8, line 10:

[Figure 4 illustrates] Figures 4A and 4B illustrate the steps of a bearer pass set up in a method for setting up a call in a CDMA mobile communication system according to a preferred embodiment of the present invention; and

The following are mark-ups to show changes made to paragraphs 28 and 29 starting at page 9, line 6 and ending at page 9, line 20:

Next, a MSC 38 is provided for controlling calls from the origination side BSC 36 and the termination side BSC 37, and an HLR 39 is connected to the MSC 38 for storage and processing position information for paging the subscriber. Finally, a router 40 is provided for setting up a direct link between the originating BSC 36 and the termination BSC 37. The direct link through the router 40 is capable of providing real time data

communication. This communication is preferably at a rate of at least [1Mbps] 1Mbps~5Mbps, and can be video data.

A method for setting up a call in the foregoing CDMA mobile communication system of the present invention will be described. First, a subscriber of the origination side mobile station 30 initiates a call by providing an International Mobile [Subscription Identifier] Station Identity (IMSI) of the termination side mobile station 31. The origination side mobile station 30 thus establishes a radio interface with the first BTS 32 or the second BTS 33 of the cell region in which the mobile station is located. The BSC 36 manages and controls the first BTS 32 or the second BTS 33 with which the origination side mobile station 30 has made the radio interface.

The following are mark-ups to show changes made to paragraph 35 starting at page 12, line 3 and ending at page 12, line 14:

Referring next to [Figure 4] Figures 4A and 4B, the steps of a bearer pass set up in a method for setting up a call in a CDMA mobile communication system of the preferred embodiment will be described. Upon reception of a call set up message, including the newly defined real time data service option and termination digits, the origination BSC sends a request message for a [Configuration] Connection Management (CM) service to an origination side of the MSC. This message, which is a call set up request, is sent

through the control path channel (S20). As a result of the request, the MSC interprets the termination number included from the origination side, refers to the HLR to find a position of the termination mobile station, and sends a paging request message, which includes the newly defined real-time data service option from the MSC to the termination side BSC through the control path channel (S21). At this time, the termination BTS (through the BSC) sends a paging message including the newly defined service option to the termination MS. If the MS is able to support this new service option, the MS sends a paging response message to the termination BSC through the BTS. As a result, the termination BSC knows the call is the newly defined mobile-to-mobile real-time data call, and starts the algorithm of new additional flow. The newly defined service option, therefore, has to be transferred to the termination BSC. The origination side of the MSC, which requests the mobile station for a radio link set up resource according to IS-2000 CAI, also requests the origination BSC for a resource assignment through the control path channel (S22).

The following are mark-ups to show changes made to paragraph 40 starting at page 14, line 14 and ending at page 15, line 2:

As a result of the transfer (S31), the termination BSC bearer information and the synchronization information is transferred from the termination BSC to the origination BSC through the bearer path channel (S32). A bearer path is thus set up between the origination BSC and the termination BSC, to facilitate real time bi-directional transfer of video data and user data of the mobile stations belonging to the origination BSC and the termination BSC. Also, similar to circuit data processing in the ISDN network, an upper protocol processing is made in peer-to-peer protocol between the origination mobile station to the termination mobile station. The T303 and T10 in Figure [4] 4A denote standard timers, each with a prescribed threshold value set up therein.

The following are mark-ups to show changes made to paragraph 45 starting at page 16, line 4 and ending at page 16, line 6:

Also, the real time video data processing is applicable even to a control for [1Mbps and 2Mbps] 1Mbps-5Mbps class in fields, such as an IMT-2000 services, as far as a network capacity between the origination BSC and the termination BSC is guaranteed.

B. Clean Specification Changes

Please replace paragraph 9 starting at page 4, line 3 and ending at page 4, line 6 with the following paragraph:

A circuit data call or a packet data call can be provided for a data call in the CDMA mobile communication system. The circuit data in a range of 14.4kbps~64kbps is processed in interlock of the MSC 18 and the IWF 20, and the PDSN 23 provides a service to process a packet data of 144kbps or 384kbps class.

Please replace paragraph 25 starting at page 8, line 8 and ending at page 8, line 10 with the following paragraph:

Figures 4A and 4B illustrate the steps of a bearer pass set up in a method for setting up a call in a CDMA mobile communication system according to a preferred embodiment of the present invention; and

Please replace paragraphs 28 and 29 starting at page 9, line 6 and ending at page 9, line 20 with the following paragraphs:

Next, a MSC 38 is provided for controlling calls from the origination side BSC 36 and the termination side BSC 37, and an HLR 39 is connected to the MSC 38 for storage and processing position information for paging the subscriber. Finally, a router 40 is

provided for setting up a direct link between the originating BSC 36 and the termination BSC 37. The direct link through the router 40 is capable of providing real time data communication. This communication is preferably at a rate of at least 1Mbps~5Mbps, and can be video data.

A method for setting up a call in the foregoing CDMA mobile communication system of the present invention will be described. First, a subscriber of the origination side mobile station 30 initiates a call by providing an International Mobile Station Identity (IMSI) of the termination side mobile station 31. The origination side mobile station 30 thus establishes a radio interface with the first BTS 32 or the second BTS 33 of the cell region in which the mobile station is located. The BSC 36 manages and controls the first BTS 32 or the second BTS 33 with which the origination side mobile station 30 has made the radio interface.

Please replace paragraph 35 starting at page 12, line 3 and ending at page 12, line 14 with the following paragraph:

Referring next to Figures 4A and 4B, the steps of a bearer pass set up in a method for setting up a call in a CDMA mobile communication system of the preferred embodiment will be described. Upon reception of a call set up message, including the newly defined real time data service option and termination digits, the origination BSC

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sends a request message for a Connection Management (CM) service to an origination side of the MSC. This message, which is a call set up request, is sent through the control path channel (S20). As a result of the request, the MSC interprets the termination number included from the origination side, refers to the HLR to find a position of the termination mobile station, and sends a paging request message, which includes the newly defined real-time data service option from the MSC to the termination side BSC through the control path channel (S21). At this time, the termination BTS (through the BSC) sends a paging message including the newly defined service option to the termination MS. If the MS is able to support this new service option, the MS sends a paging response message to the termination BSC through the BTS. As a result, the termination BSC knows the call is the newly defined mobile-to-mobile real-time data call, and starts the algorithm of new additional flow. The newly defined service option, therefore, has to be transferred to the termination BSC. The origination side of the MSC, which requests the mobile station for a radio link set up resource according to IS-2000 CAI, also requests the origination BSC for a resource assignment through the control path channel (S22).

Please replace paragraph 40 starting at page 14, line 14 and ending at page 15, line 2 with the following paragraph:

As a result of the transfer (S31), the termination BSC bearer information and the synchronization information is transferred from the termination BSC to the origination BSC through the bearer path channel (S32). A bearer path is thus set up between the origination BSC and the termination BSC, to facilitate real time bi-directional transfer of video data and user data of the mobile stations belonging to the origination BSC and the termination BSC. Also, similar to circuit data processing in the ISDN network, an upper protocol processing is made in peer-to-peer protocol between the origination mobile station to the termination mobile station. The T303 and T10 in Figure 4A denote standard timers, each with a prescribed threshold value set up therein.

Please replace paragraph 45 starting at page 16, line 4 and ending at page 16, line 6 with the following paragraph with the following paragraph:

Also, the real time video data processing is applicable even to a control for 1Mbps~5Mbps class in fields, such as an IMT-2000 services, as far as a network capacity between the origination BSC and the termination BSC is guaranteed.

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IN THE CLAIMS:

A. Please amend claim 5 as follows:

Amended Claims With Mark-ups to Show Changes Made

5. (Amended) The method of claim 1, wherein transferring bearer information comprises:

sending a request from the origination BSC to the MSC for [Configuration] Connection Management service carrying required information, for setting up a radio link with the origination mobile station upon reception of a call set up message from the origination mobile station;

sending a request from the MSC to the termination BSC for the termination number for a call, to set up a radio link between the termination BSC and the termination mobile station; and

transferring bearer information of the termination BSC to the origination BSC, and transferring a response to the bearer information from the origination BSC to the termination BSC, to form the bearer path.

Clean Set of Amended Claims

5. (Amended) The method of claim 1, wherein transferring bearer information comprises:

sending a request from the origination BSC to the MSC for Connection Management service carrying required information, for setting up a radio link with the origination mobile station upon reception of a call set up message from the origination mobile station;

sending a request from the MSC to the termination BSC for the termination number for a call, to set up a radio link between the termination BSC and the termination mobile station; and

transferring bearer information of the termination BSC to the origination BSC, and transferring a response to the bearer information from the origination BSC to the termination BSC, to form the bearer path.

REMARKS

Claims 1-20 are pending in this application. By this Preliminary Amendment, the specification and claims have been amended. Prompt examination and allowance in due course are respectfully solicited.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Anthony H. Nourse, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



Daniel Y.J. Kim
Registration No. 36,186
Anthony H. Nourse
Registration No. 46,121

P.O. Box 221200
Chantilly, VA 20153-1200
703 502-9440 DYK:AHN/jad
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